



# HTML

## “Hypertext Markup Language” A Brief Introduction

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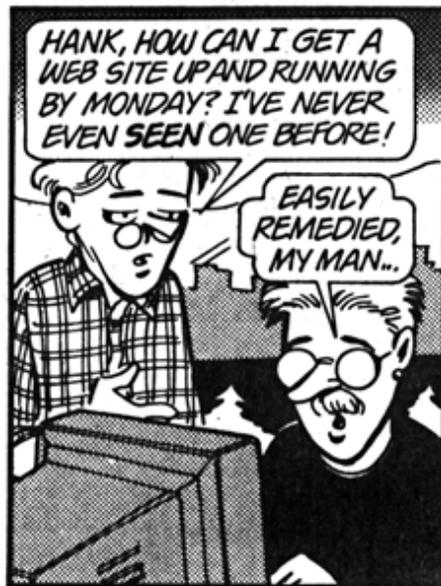
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# DOONESBURY



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# HTML: what is it?

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- ◆ **Hypertext Markup Language (HTML)**
  - World Wide Web (WWW) hypertext standard
  - Follows Standard Generalized Markup Language (SGML) format conventions
- ◆ **Source file is a simple ASCII text file**
  - Simple ASCII text file with embedded commands
  - You can use your favorite text editor
  - Works on all computer systems
- ◆ **Commands elements are encoded as *<tagnames>***

# HTML: tools

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- ◆ Editor to create HTML source file
  - Filename extension is usually “.html” or “.htm”
  - Any simple text editor will work
    - ◆ VI, PICO, EMACS, BBEdit, SimpleText, Notepad, etc.
  - Word processor that will save in “text” mode
    - ◆ MS Word, ClarisWorks, WordPerfect, FrameMaker, etc.
  - Many “WYSIWYG” editors are emerging
    - ◆ PageMill, Sitemill, etc.
    - ◆ “save as HTML” feature in MS Word 6.0, ClarisWorks 4.0, etc.
- ◆ Browser for viewing pages
  - Netscape™, Internet Explorer, NCSA Mosaic™, Lynx, etc.

# HTML: development steps

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- ◆ **Step 1: open/create HTML source file with editor**
  - Create/open file with editor
  - Enter/edit text
  - Save file (crucial step)
- ◆ **Step 2: open/reload source file with browser to view**
  - Usually this is a “local” file
  - May be open through a WWW server
- ◆ **Step 3: revise by repeating steps 1 & 2 until satisfied**

# HTML Exercise 1

- ◆ Startup your text editor
  - on Windows start **Notepad**
  - on Macintosh start **SimpleText** or **TeachText**
- ◆ Enter this simple HTML document:

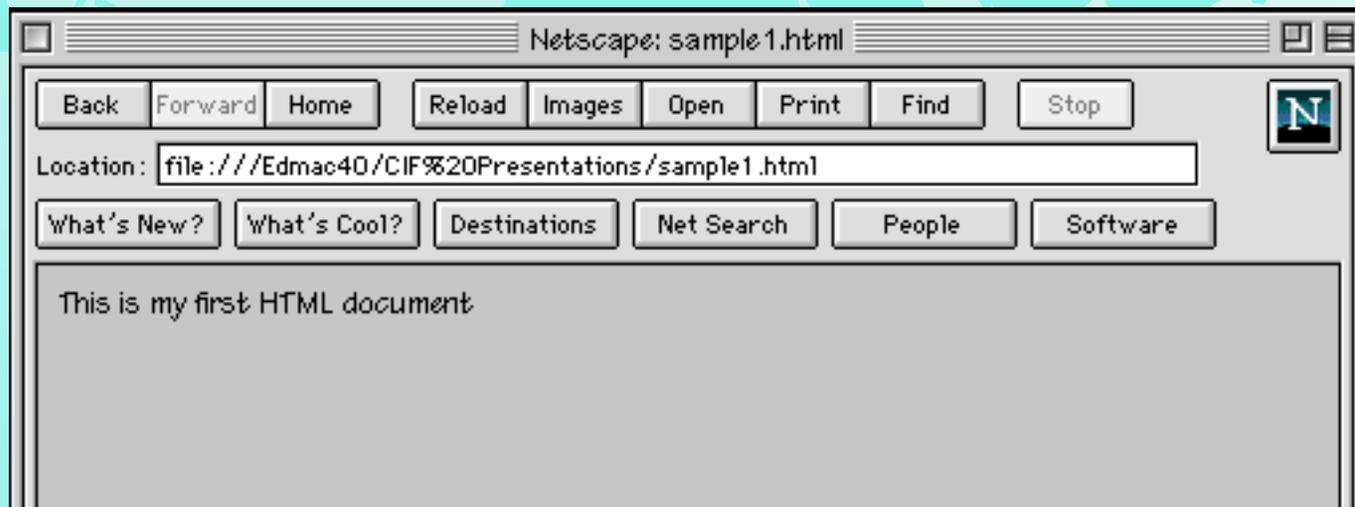
```
<HTML>  
This is my first HTML document  
</HTML>
```
- ◆ Save this document as “**sample1.htm**”
- ◆ Open local file “**sample1.htm**” with **Netscape**

# HTML Exercise 1

**<HTML>**

This is my first HTML document

**</HTML>**



# HTML: elements (commands)

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- ◆ HTML standards are evolving
  - HTML 3.2 is current “definitive” standard
  - HTML 4.0 is under development
  - Older browsers follow older version of standard
  - Some browsers have “unique” elements
- ◆ Browser decides how element is represented
  - “Look” will vary on different browsers & systems
  - Some standards in representation can be expected
  - Some browsers will not interpret an element

# HTML: elements (or commands)

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- ◆ Elements are encoded as **<tagname>**
  - defined by left & right angle brackets (<>)
  - case independent, e.g. **<TaGnAmE>**
    - ◆ exceptions are filenames or network resource names
  - *usually* mark a block of text
    - ◆ **<tagname>** to begin block of text
    - ◆ **</tagname>** to end block of text
- ◆ Complex elements have options or attributes
  - These are space delimited
  - Some are required but many are optional

# HTML: document structure

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- ◆ **<HTML>** *document* **</HTML>**
  - indicates start & end of an HTML document
- ◆ **<HEAD>** *heading text* **</HEAD>**
  - indicates start & end of heading information
- ◆ **<BODY>** *full formatted document page* **</BODY>**
  - indicates start & end of document text
  - in Netscape™ only
    - ◆ **BGCOLOR=***value* argument for background color
    - ◆ **BACKGROUND=***“URL”* argument for background image

# HTML: heading & general

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- ◆ **<TITLE>** *document title* **</TITLE>**
  - title of document displayed on browser's titlebar
- ◆ **<!--** *text of your comment* **-->**
  - included within source of document but never displayed

# HTML: document format

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- ◆ **<P ALIGN=CENTER>** *paragraph contents* **</P>**
  - normal format is **<P>** *text of your paragraph* **</P>**
  - historical usage is **<P>** to just mark the beginning
  - options: **ALIGN = CENTER, LEFT, or RIGHT**
- ◆ **<BR>** line break
  - options: **CLEAR = LEFT, RIGHT, or ALL**
- ◆ **<HR>** horizontal rule
  - options: **SIZE =  $n$ , WIDTH =  $n\%$ , NOSHADE**  
**ALIGN = CENTER, LEFT, or RIGHT**

# HTML Exercise 2

- ◆ Enter simple HTML document template from “Quick Reference” sheet

```
<HTML><HEAD><TITLE>This is the page title</TITLE>
```

```
</HEAD><BODY BGCOLOR=#FFFFFF>
```

```
<H1>This is a section heading</H1>
```

```
<P>This is the text of the body of the page and contains other HTML  
formatting elements and hypertext references and images</P>
```

```
<HR><ADDRESS>your name, address, credit info</ADDRESS>
```

```
</BODY></HTML>
```

- ◆ Save this document as “sample2.htm”
- ◆ Open local file “sample2.htm” with Netscape

# HTML Exercise 2

**<HTML><HEAD><TITLE>**This is the page title**</TITLE>**

**</HEAD><BODY BGCOLOR=#FFFFFF>**

**<H1>**This is a section heading**</H1>**

**<P>**This is the text of the body of the page and contains other HTML formatting elements and hypertext references and images.**</P>**

**<HR><ADDRESS>**your name, address, credit info**</ADDRESS>**

**</BODY></HTML>**



# HTML: section heading

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- ◆ **<Hn ALIGN=CENTER>** *centered heading text* **</Hn>**
  - HTML allows six levels of headings marked by labels
    - ◆ Examples:
      - <H1>** This is a level 1 heading **</H1>**
      - <H6>** This is a level 6 heading **</H6>**
      - <H3 ALIGN=CENTER>** Centered level 3 heading **</H3>**
  - No forced hierarchy, levels can be in any order
  - Font size and style vary with level
    - ◆ Level 1 is largest font size, Level 6 is smallest
  - options: **ALIGN = LEFT, CENTER, or RIGHT**  
default value is **LEFT**

# HTML: text formatting

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- ◆ **<B>** *text* **</B>** bold text
- ◆ **<I>** *text* **</I>** italicized text
- ◆ **<U>** *text* **</U>** underlined text
  - ignored in some browsers (e.g. Netscape™)
- ◆ **<TT>** *text* **</TT>** typewriter text
  - usually a fixed width font such as courier
- ◆ **<FONT>** *text* **</FONT>**
  - specify font color, size, and other attributes

# HTML: text formatting

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- ◆ **<BLOCKQUOTE>** *quotations* **</BLOCKQUOTE>**
  - use to indent a block of text
- ◆ **<PRE>** *pre formatted text* **</PRE>**
  - usually in fixed-width font such as courier
  - option **WIDTH=number\_characters** to set width of text
- ◆ **<ADDRESS>** *address information* **</ADDRESS>**
  - address information, signatures, authorship
  - usually italicized
- ◆ **<CENTER>** *centered text* **</CENTER>**
  - only operative in Netscape™ browser

# HTML: text formatting

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- ◆ **<EM>** *emphasized text* **</EM>**
- ◆ **<STRONG>** *stronger emphasized* **</STRONG>**
- ◆ **<CODE>** *computer code* **</CODE>**
  - usually fixed-width font
- ◆ **<CITE>** *citation* **</CITE>**
  - typically italicized
- ◆ **<SAMP>** *literal characters* **</SAMP>**

# HTML: text formatting

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- ◆ **<KBD>** *keyboard text* **</KBD>**
  - usually bold, fixed width
- ◆ **<VAR>** *variable name* **</VAR>**
  - usually italicized
- ◆ **<DFN>** *definition text* **</DFN>**
  - often bold and italicized

# HTML Exercise 3

- ◆ Edit “**sample2.htm**” to include basic formatting elements such as:

**<B>bold text</B>**

*</I>italics</I>*

<U>underlined text</U>

**<BLOCKQUOTE>block quoted text</BLOCKQUOTE>**

- ◆ Save this document as “**sample3.htm**”
- ◆ Open local file “**sample3.htm**” with Netscape

# HTML Exercise 3

**<HTML><HEAD><TITLE>**This is the page title**</TITLE>**

**</HEAD><BODY BGCOLOR=#FFFFFF>**

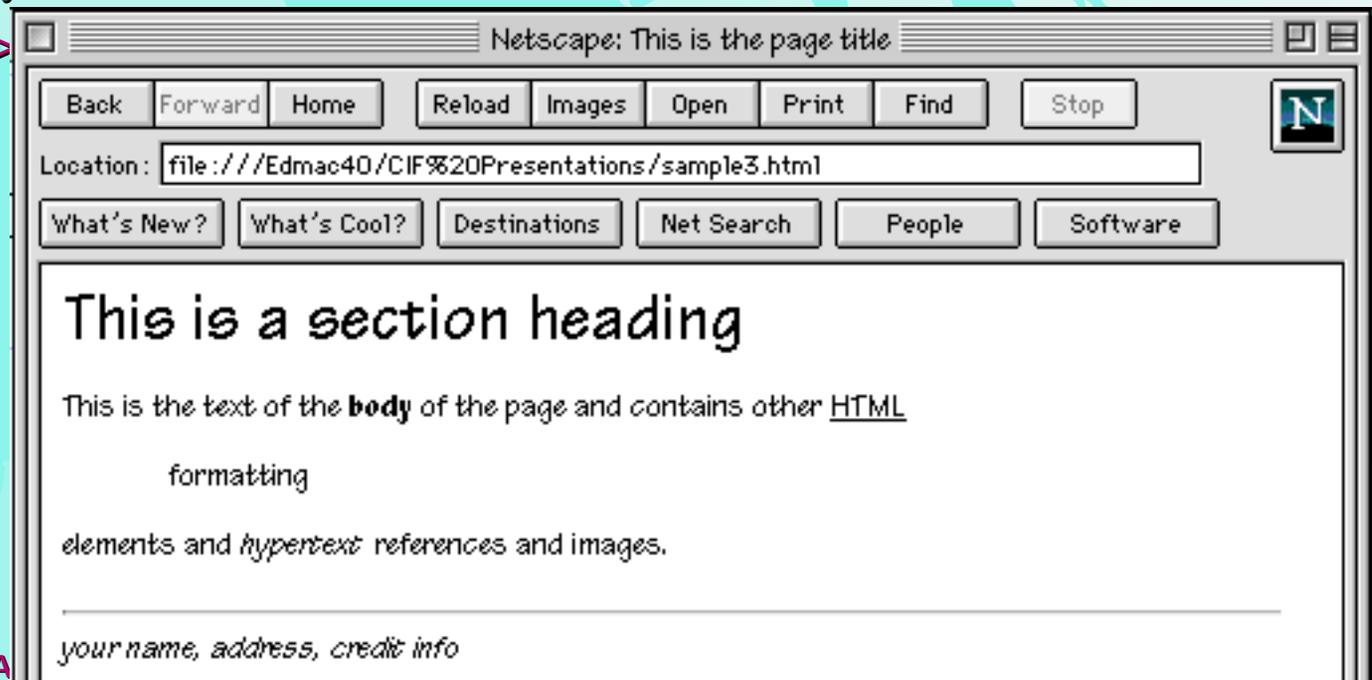
**<H1>**This is a section heading**</H1>**

**<P>**This is the text of the **<B>**body**</B>** of the page and contains other **<U>**HTML**</U>**

**<BLOCKQUOTE>**formatting **</BLOCKQUOTE>**elements and **<I>**hypertext**</I>** references and images.**</P>**

**<HR><ADDRESS>**your name, address, credit info**</ADDRESS>**

**</BODY></HTML>**



# HTML: lists

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- ◆ Two different types of formatted list
  - Standard list elements (**OL**, **UL**, **MENU**, **DIR**)
  - Definition list element (**DL**)
- ◆ May be nested & mixed
- ◆ New options for these lists

# HTML: standard lists

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- ◆ Lists are formatted as:

*<list\_tagname>*

*<LI> list item 1*

*<LI> list item 2*

*</list\_tagname>*

- ◆ *list\_tagname* may be:

**OL** for ordered (numbered) lists

**UL** for unordered (bullets) lists

**DIR** for directory lists

**MENU** for menu lists

# HTML: standard lists

◆ Examples:

**<OL>**

**<LI>** *ordered list item 1*

**<LI>** *ordered list item 2*

**<LI>** *ordered list item 3*

**</OL>**

**<UL>**

**<LI>** *unordered list item 1*

**<LI>** *unordered list item 2*

**</UL>**

# HTML: definition lists

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- ◆ Definition lists are formatted as:

**<DL>**

**<DT>** *list item 1*

**<DD>** *list item 2*

**</DL>**

- ◆ Where:

- **<DL>** *complete list content* **</DL>** defines the full list
- **<DT>** defines the “term” (usually a single line)
- **<DD>** defines the “definition” (may be multiple lines)
  - ◆ indented from **<DL>** & **<DT>** elements

# HTML Exercise 4

- ◆ Edit “sample3.htm” to include lists:

```
<UL><LI>Apples<LI>Oranges<LI>Bananas</UL>
```

```
<OL><LI>Apples<LI>Oranges<LI>Bananas</OL>
```

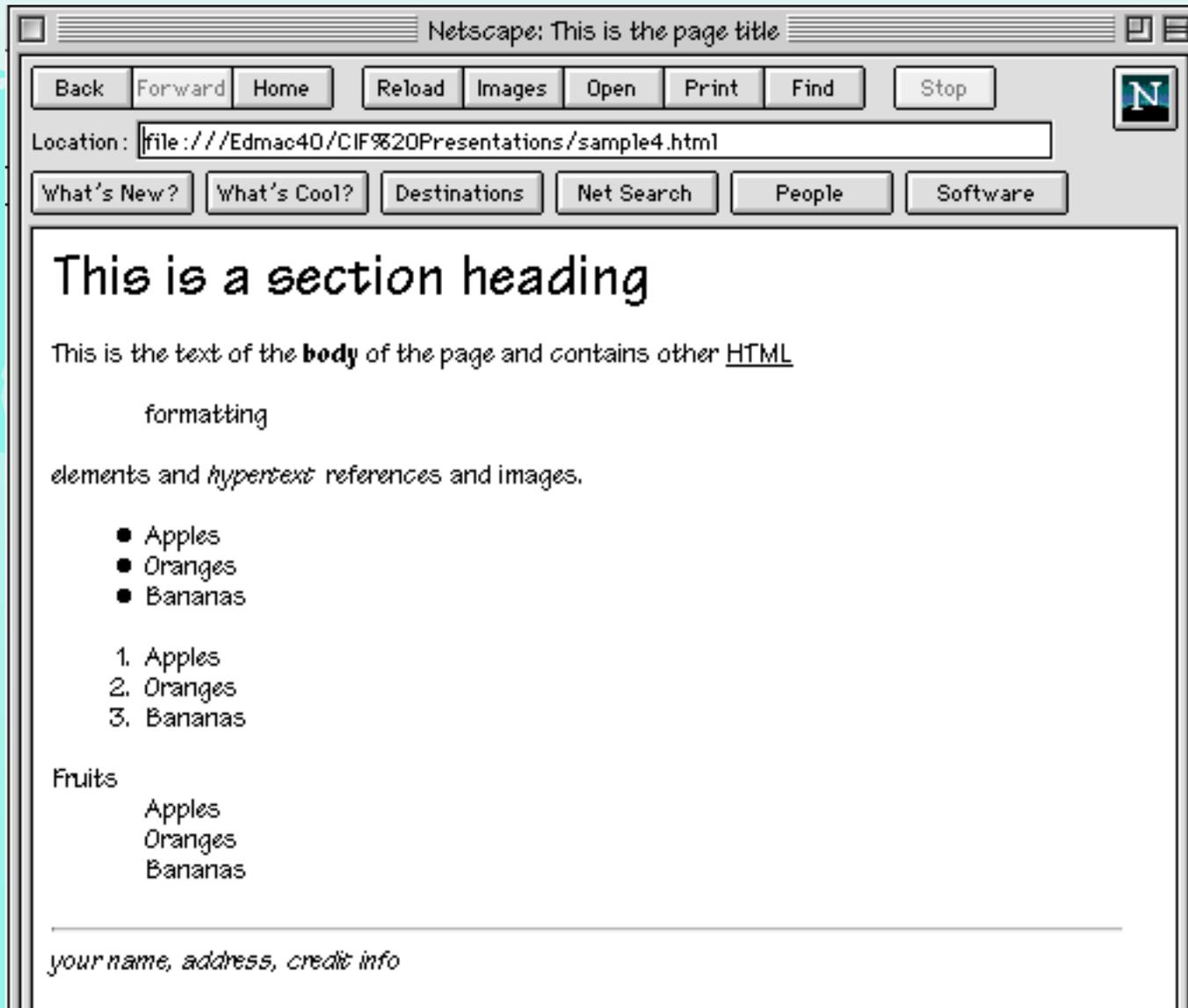
```
<DL><DT>Fruits<DD>Apples<DD>Oranges<DD>Bananas</DL>
```

- ◆ Save this document as “sample4.htm”
- ◆ Open local file “sample4.htm” with Netscape

# HTML Exercise 4

```
<HTML><HEAD><TITLE>This is the page title</TITLE>
</HEAD><BODY BGCOLOR=#FFFFFF>
<H1>This is a section heading</H1>
<P>This is the text of the <B>body</B> of the page and contains other <U>HTML</U>
<BLOCKQUOTE>formatting </BLOCKQUOTE>elements and <I>hypertext</I>
references and images.</P>
<UL><LI>Apples<LI>Oranges<LI>Bananas</UL>
<OL><LI>Apples<LI>Oranges<LI>Bananas</OL>
<DL><DT>Fruits<DD>Apples<DD>Oranges<DD>Bananas</DL>
<HR><ADDRESS>your name, address, credit info</ADDRESS>
</BODY></HTML>
```

# HTML Exercise 4



# HTML: URL (uniform resource locator)

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## ◆ Structure for a URL is

– **protocol** **::** **server** **[: port ]** **resource**

- ◆ **protocol:** resource protocol type  
e.g. http, file, ftp, gopher, etc.
- ◆ **server:** Internet system name for server  
e.g. www.address.gov
- ◆ **port:** TCP port number for resource  
e.g. 80 (for http) (optional)
- ◆ **resource:** pathname for resource on server  
e.g. /path/subdir/file.ext

# HTTP: URL (uniform resource locator)

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- ◆ types (must have browsers fully configured)

**http** (Hypertext Transfer Protocol server)

**ftp** (anonymous File Transfer Protocol server)

**mailto** (send mail to a designated Internet mail address)

not supported by all servers

**file** (local file access)

**telnet** (terminal link protocol server)

**gopher** (gopher protocol server)

**news** (newsgroups via NNTP protocol server)

**wais** (Wide-Area Information Servers protocol)

# HTTP: URL (uniform resource locator)

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## ◆ Examples

**<http://www.lanl.gov>**

**<http://education.lanl.gov>**

**<gopher://gumby.brain.headache.edu:151/7fonebook.txt>**

**<ftp://internet.addr.edu/path/splunge.txt>**

**<ftp://username:passwd@internet.addr.edu/dir1/file.txt>**

**<mailto:username@internet.addr.edu>**

**<news:news.group>**

**<wais://wais.server.edu/database?search>**

# HTML: image tag

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- ◆ **<IMG SRC="graphicsfilename.gif" ALT="test image" ALIGN=top>**
  - **SRC** points to graphics file
    - ◆ pointer is a URL (maybe a pathname to a local file)
    - ◆ inline must be GIF, JPEG, X-bitmaps, or X-pixelmaps
  - **ALT** is alternative text instead of image
  - option **ALIGN** to specify alignment with neighboring text
    - ◆ **TOP, MIDDLE,** or **BOTTOM**
    - ◆ currently only Netscape™ adds **RIGHT & LEFT**
      - wraps text around images

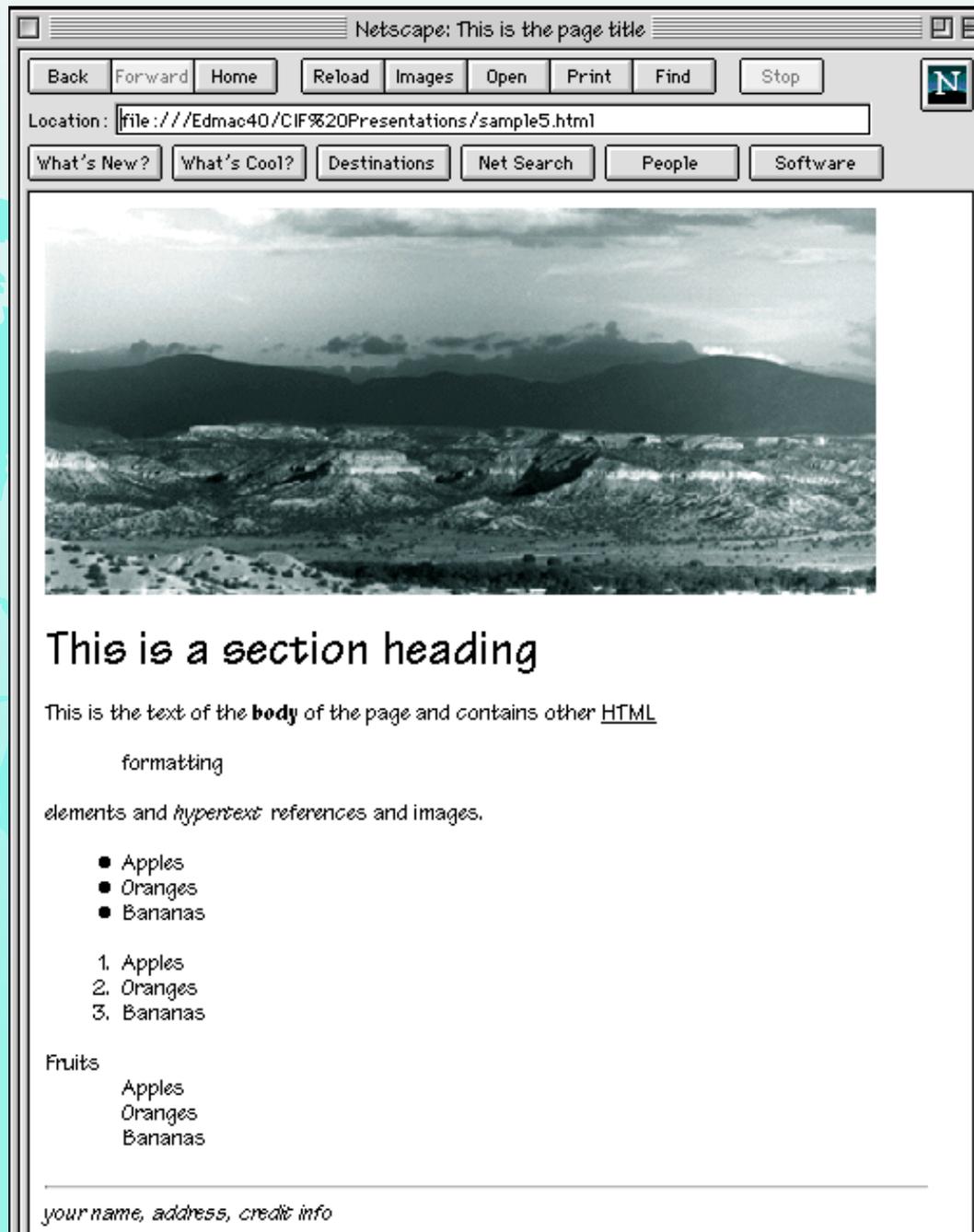
# HTML Exercise 5

- ◆ Edit “sample4.htm” to include an image:  

```
<IMG SRC=“http://education.lanl.gov/gifs/jemez.gif”  
  ALT=“LANL IMAGE” ALIGN=BOTTOM>
```
- ◆ Save this document as “sample5.htm”
- ◆ Open local file “sample5.htm” with Netscape

# HTML Exercise 5

```
<HTML><HEAD><TITLE>This is the page title</TITLE>
</HEAD><BODY BGCOLOR=#FFFFFF>
<IMG SRC="http://education.lanl.gov/gifs/jemez.gif"
ALT="LANL IMAGE" ALIGN=BOTTOM>
<H1>This is a section heading</H1>
<P>This is the text of the <B>body</B> of the page and contains other <U>HTML</U>
<BLOCKQUOTE>formatting </BLOCKQUOTE>elements and <I>hypertext</I>
references and images.</P>
<UL><LI>Apples<LI>Oranges<LI>Bananas</UL>
<OL><LI>Apples<LI>Oranges<LI>Bananas</OL>
<DL><DT>Fruits<DD>Apples<DD>Oranges<DD>Bananas</DL>
<HR><ADDRESS>your name, address, credit info</ADDRESS>
</BODY></HTML>
```



# HTML: hypertext anchor tag

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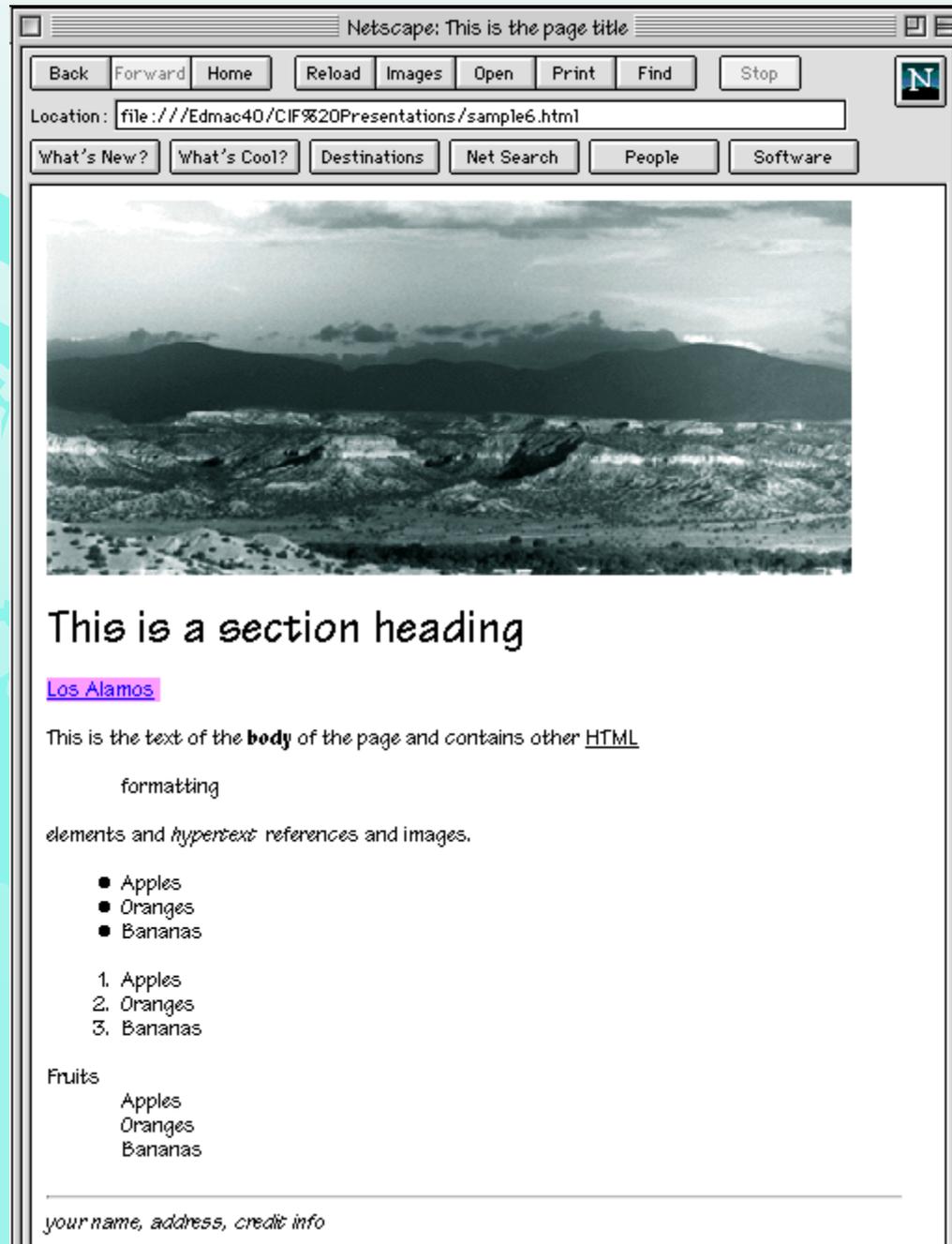
- ◆ **<A HREF="URL#value">** *hypertext string* **</A>**
  - creates a hypertext link, click on *hypertext string* to jump
  - **optional #value** is a named link defined within the **URL**
  - hypertext string may contain **<IMG>**
  - example:  
**<A HREF="http://www.lanl.gov">** LANL **</A>**
- ◆ **<A NAME=anchor\_name>** *link text* **</A>**
  - defines a location by name for link within the document
  - examples:  
**<A NAME=section1>** *text* **</A>** defines link location  
**<A HREF=#section1>** *text* **</A>** creates link to “section1”

# HTML Exercise 6

- ◆ Edit “sample5.htm” to include an hypertext link:  
`<A HREF=“http://www.lanl.gov/”>Los Alamos</A>`
- ◆ Save this document as “sample6.htm”
- ◆ Open local file “sample6.htm” with Netscape

# HTML Exercise 6

```
<HTML><HEAD><TITLE>This is the page title</TITLE>
</HEAD><BODY BGCOLOR=#FFFFFF>
<IMG SRC="http://education.lanl.gov/gifs/jemez.gif"
ALT="LANL IMAGE" ALIGN=BOTTOM>
<H1>This is a section heading</H1>
<A HREF="http://www.lanl.gov">Los Alamos</A>
<P>This is the text of the <B>body</B> of the page and contains other <U>HTML</U>
<BLOCKQUOTE>formatting </BLOCKQUOTE>elements and <I>hypertext</I>
references and images.</P>
<UL><LI>Apples<LI>Oranges<LI>Bananas</UL>
<OL><LI>Apples<LI>Oranges<LI>Bananas</OL>
<DL><DT>Fruits<DD>Apples<DD>Oranges<DD>Bananas</DL>
<HR><ADDRESS>your name, address, credit info</ADDRESS>
</BODY></HTML>
```



# HTML: tables

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- ◆ Tables may be formatted as:
  - **<TABLE>** *table contents* **</TABLE>** for table definition
    - ◆ optional **BORDER=*n*** to turn on border around table  
*n* is the value of the line weight of border, **0** is no border
  - **<TR>** *table row contents* **</TR>** for table row
  - **<TH>** *table header contents* **</TH>** for table header
  - **<TD>** *table cell contents* **</TD>** for table data
  - There are several options to some of these commands that allow control over alignment, span, width, and other formatting parameters

# HTML Exercise 7

- ◆ Edit “sample6.htm” to include an hypertext link:

```
<TABLE BORDER=1>
```

```
<TR><TD>Apples</TD><TD>Oranges</TD><TD>Bananas</TD></TR>
```

```
<TR><TD>Red</TD><TD>Green</TD><TD>Blue</TD></TR>
```

```
</TABLE>
```

- ◆ Save this document as “sample7.htm”

- ◆ Open local file “sample7.htm” with Netscape

# HTML Exercise 7

```
<HTML><HEAD><TITLE>This is the page title</TITLE>
</HEAD><BODY BGCOLOR=#FFFFFF>
<IMG SRC="http://education.lanl.gov/gifs/jemez.gif"
ALT="LANL IMAGE" ALIGN=BOTTOM>
<H1>This is a section heading</H1>
<A HREF="http://www.lanl.gov">Los Alamos</A>
<P>This is the text of the <B>body</B> of the page and contains other <U>HTML</U>
<BLOCKQUOTE>formatting </BLOCKQUOTE>elements and <I>hypertext</I>
references and images.</P>
<TABLE BORDER=1 ><TR><TD>Apples</TD><TD>Oranges</TD>
<TD>Bananas</TD></TR><TR><TD>Red</TD><TD>Green</TD>
<TD>Blue</TD></TR></TABLE>
<HR><ADDRESS>your name, address, credit info</ADDRESS>
</BODY></HTML>
```

Netscape: This is the page title

Back Forward Home Reload Images Open Print Find Stop

Location: file:///Edmac40/CReload Page ntations/sample7.html

What's New? What's Cool? Destinations Net Search People Software



This is a section heading

[Los Alamos](#)

This is the text of the **body** of the page and contains other HTML formatting elements and *hypertext* references and images.

Apples	Oranges	Bananas
Red	Green	Blue

---

*your name, address, credit info*

# HTML: multimedia formats

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- ◆ Several different multimedia formats
- ◆ Server determines transfer mode
  - Binary or ASCII text mode determined by file extension
- ◆ MIME compliant
- ◆ Types include:
  - images (**GIF**, **JPEG**, & **TIFF** formats popular)
  - sound (**AU**, **SND** are popular sound formats)
  - movies (**MPEG** & **QuickTime**<sup>®</sup> formats)
  - compression/archiving/encoding formats

# HTML references books

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- ◆ ***HTML Sourcebook (third edition)*** - Ian Graham  
ISBN 0-471-17575-7                      \$29.95
- ◆ ***The Advanced HTML Companion*** - Schengili-Roberts  
ISBN 0-12-623540-6                      \$29.95
- ◆ ***The Project Cool Guide to HTML*** - Martin & Davis  
ISBN 0-471-17371-1                      \$19.99

# HTML design references

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- ◆ *Designing Visual Interfaces* - Mullet & Sano  
ISBN 0-13-303389-9
- ◆ WWW sites for good HTML design & style tips
  - <http://www.dsiegel.com/tips/index.html>
  - <http://ds.dial.pipex.com/pixelp/wpdesign/wpdintro.htm>
  - <http://union.ncsa.uiuc.edu/HyperNews/get/www/style.html>
  - [http://home.netscape.com/assist/net\\_sites/](http://home.netscape.com/assist/net_sites/)
  - <http://home.netscape.com/people/hagan/chi96/>
  - <http://www.cnet.com/Content/Features/Howto/Design/>



# Thanks!

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